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No. 129

In the Supreme Court of the United States

OCTOBER TERM, 1948

WILLIAM T. URIE, PETITIONER

v.

GUY A. THOMPSON, TRUSTEE OF THE MISSOURI PACIFIC RAILROAD COMPANY, RESPONDENT

ON CERTIORARI TO THE SUPREME COURT OF MISSOURI

BRIEF FOR THE INTERSTATE COMMERCE COMMISSION AS AMICUS CURIAE

INDEX

	Page
1. The Boiler Inspection Act	3
2. Rules and regulations of the Commission under the Boiler Inspection Act	7
3. Alleged violations of Boiler Inspection Act and rules thereunder in case at bar	12
4. Reports of Commission in proceedings under the Boiler Inspection Act	22
5. Reasons for rules 116 and 120	38

TABLE OF CASES

Anderson v. *B. & O. R. Co.*, 89 F. (2d) 629 and 96 F. (2d) 796 — 15
Inspection of Locomotive Boilers, 73 I. C. C. 761 — 12
Johnston v. *Atlantic Coast Line R. Co.*, 190 I. C. C. 351 and 222 I. C. C. 542 — 28, 32
Johnston v. *Atchison, T. & S. F. Ry. Co.*, 225 I. C. C. 519 — 34
Napier v. *Atlantic Coast Line*, 272 U. S. 605 — 2, 3, 6, 22
Public Utilities Commission of Ohio v. *Pennsylvania i Co.*, 151 I. C. C. 448 — 26
Rules for Testing Other Than Steam Locomotives, 122 I. C. C. 414 — 3
United States v. *B. & O. R. Co.* (Power Reverse Gear Case), 293 U. S. 454 — 3, 6, 28
Wisconsin R. R. Comm. v. *A. & R. R. R. Co.*, 142 I. C. C. 199 — 22, 39

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The Interstate Commerce Commission respectfully submits this brief as *amicus curiae* for the purpose of furnishing the court with certain technical and other information within its possession bearing on the questions involved and of making certain suggestions of a general nature, which may be of assistance to the court in deciding the issues presented.[1]

The case is one under the Federal Employers' Liability Act, and the wrong relied upon for the recovery of damages is an alleged violation of the

[1] In granting the writ of certiorari on October 11, 1948, the court instructed the clerk to call our attention to the pendency of the case.

Boiler Inspection Act and of certain of the regulations of the Commission thereunder, as the result of which, it is alleged, petitioner contracted pneumoconiosis or silicosis. There is no challenge of the authority of the Commission under the Boiler Inspection or other Act nor of the validity of any rule or regulation of the Commission under the Boiler Inspection Act or any order or other action of the Commission. Nor is there any question of the jurisdiction of the Commission; for, while it has certain powers and duties under the Boiler Inspection Act, cf. *Napier* v. *Atlantic Coast Line*, 272 U. S. 605, 612, it is, of course, wholly without jurisdiction to determine the merits of claims for damages of this nature.

In view of these facts and of the nature of this case, we feel that this presentation should be confined to (1) a brief analysis of the Boiler Inspection Act and the history of its provisions, (2) a statement of the pertinent rules and regulations of the Commission under that Act, (3) certain suggestions regarding the alleged violations of the Boiler Inspection Act and the Commission's rules thereunder, together with explanation of technical terms used to describe the locomotive appliances alleged to have been in improper condition, (4) references to the reports of the Commission in proceedings under the Boiler Inspection Act, and (5) the reasons for the rules of the Commission alleged to have been violated in this case.

1. The Boiler Inspection Act

The Act known as the Boiler Inspection Act or the Locomotive Inspection Act was originally enacted February 17, 1911 (c. 103, 36 Stat. 913). It was entitled "An Act To promote the safety of employees and travelers upon railroads by compelling common carriers engaged in interstate commerce to equip their locomotives with safe and suitable boilers and appurtenances thereto." In its original form it applied only to the boilers of steam locomotives and their appurtenances.

Four years later it was amended (c. 169, 38 Stat. 1192, approved March 4, 1915) so as to provide that it shall apply to and include the entire locomotive and tender and all their parts and appurtenances.

Since the original Act applied only to locomotives propelled by steam power, the amendment of 1915 was, at the time of its enactment, likewise limited in its application. But in the amendment of June 7, 1924 (c. 355, 43 Stat. 659), this restriction was removed and the law was made to apply to all locomotives used or permitted to be used on the line of any carrier subject to the Act, regardless of the power by which they are propelled. See *Napier v. Atlantic Coast Line, supra*, 272 U. S., p. 608; *United States* v. *B. & O. R. Co.*, (Power Reverse Gear case), 293 U. S. 454. See also report of the Commission entitled *Rules for Testing Other than Steam Power Locomotives,*

122 I. C. C. 414 (1927), which explains the changes in the Act up to that time.

Since 1924 there have been several minor amendments of the Act but no material change in its substantive provisions.[2]

The original Act was in ten sections. Section 10, relating to appropriations to carry out the Act, was repealed by section 5 of the Act of June 7, 1924. The remaining nine sections, together with section 2 of the Act of March 4, 1915 (which enlarged the duties of the inspectors) are reproduced in 45 U. S. Code in thirteen sections, numbered 22–34.

Section 1, as amended June 7, 1924 (45 U. S. C., sec. 22) defines the terms "carrier" and "common carrier" as used in the Act as meaning "a common carrier by railroad, or partly by railroad and partly by water, within the continental United States, subject to the Interstate Commerce Act, as amended, excluding street, suburban, and

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[2] The amendments since 1924 are as follows:

June 27, 1930 (c. 644, 46 Stat. 822), merely adjusting salaries of chief and assistant chief inspectors.

April 22, 1940 (c. 124, 54 Stat. 148), changing the titles "chief inspector" and "assistant chief inspector" to "director of locomotive inspection" and "assistant director of locomotive inspection," respectively, wherever those terms were used in the Act. That amendment also struck out "of locomotive boilers" in the first sentence of section 3 and in section 9 of the original Act.

May 27, 1947 (c. 85, 61 Stat. 120), relating merely to salaries.

One other earlier amendment, approved June 26, 1918 (c. 105, 40 Stat. 616), merely adjusted salaries of inspectors.

interurban electric railways unless operated as a part of a general railroad system of transportation."

Section 2, as amended March 4, 1915, and June 7, 1924 (45 U. S. C., sec. 23), contains a general substantive provision reading:

> It shall be unlawful for any carrier to use or permit to be used on its line any locomotive unless said locomotive, its boiler, tender, and all parts and appurtenances thereof are in proper condition and safe to operate in the service to which the same are put, that the same may be employed in the active service of such carrier without unnecessary peril to life or limb, and unless said locomotive, its boiler, tender, and all parts and appurtenances thereof have been inspected from time to time in accordance with the provisions of this Act and are able to withstand such test or tests as may be prescribed in the rules and regulations hereinafter provided for.

This section, as will be noted, contains two important general provisions. First, the locomotives, tenders, and all appurtenances must be *in proper condition and safe to operate* in the service to which they are put and may be employed in active service *without unnecessary peril to life or limb.* Second, they must be inspected as required by subsequent provisions of the Act and be able to withstand such tests as may be prescribed in the rules and regulations provided for in subsequent provisions.

Sections 3 and 4, as amended June 26, 1918, June 7, 1924, June 27, 1930, and April 22, 1940 (45 U. S. C., secs. 24, 25, 26, and 27), provide for the appointment of a director and two assistant directors of locomotive inspection, and not over 65 inspectors, and define their duties.

Section 5, as amended and enlarged, in connection with sections 2 and 6, provides for rules, instructions, and regulations for the inspection of locomotives, and authorizes the Commission to approve or initiate regulations. See *Napier* v. *Atlantic Coast Line*, 272 U. S. 605, 611–613, and *U. S.* v. *B. & O. R. Co.*, 293 U. S. 454, 458–9, 461–2.

Section 6, as amended April 22, 1940 (45 U. S. C., sec. 29), relates to the duties of district inspectors, inspection and repairs by carriers, notice to carriers of condition of boilers, appeals to director and reexamination, and further appeal to the Commission.

Section 7, as amended April 22, 1940 (45 U. S. C., sec. 31), provides for annual reports by the Director of Locomotive Inspection to the Commission.

Section 8, as amended April 22, 1940 (45 U. S. C., secs. 32 and 33), provides for reports by carriers to Director of Locomotive Inspection as to accidents resulting from failure from any cause of a locomotive or its appurtenances resulting in serious injury or death to one or more persons,

investigation and report thereon by Director, and reports of such accidents by Commission.

Section 9, as amended April 22, 1940 (45 U. S. C., sec. 33), provides for penalties for violations of the provisions of the Act or any rule or regulation made thereunder, or any lawful order of any inspector.

2. Rules and regulations of the Commission under the Boiler Inspection Act

Rules for the inspection and testing of steam locomotive boilers and their appurtenances were approved by the Commission, pursuant to the original Act, on June 2, 1911, to become effective July 1, 1911.[3]

After the Act was extended to cover the entire locomotive, by the 1915 amendment, the Commission, by order of October 11, 1915, approved rules and instructions for the inspection and testing of steam locomotives and tenders and their appurtenances, effective July 1, 1916.[4]

Pursuant to the enlargement of the Act by the 1924 amendment to apply to all locomotives, the Commission adopted and promulgated separate rules for the inspecting and testing of locomotives other than steam, by order of December 14, 1925, effective July 1, 1926.[5]

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[3] See Annual Report, I. C. C., 1911, pp. 88–89.

[4] See Annual Report, I. C. C., 1916, p. 56 et seq.

[5] See Annual Report, I. C. C., 1926, p. 75.

These rules have been amended from time to time, by subsequent orders of the Commission. As so amended they are still in force. The rules in effect on June 1, 1938, are published in 49 C. F. R. 91.1 et seq., pp. 1233 et seq. Subsequent changes are shown in 49 C. F. R., Cum. Supp., pp. 12189 et seq.[6]

Only the rules relating to steam locomotives appear pertinent here, in view of the fact, noted in the opinion of the court below, that "Plaintiff had worked on coal-burning engines." (R. 24.)

It further appears that only such of these rules as were in effect during the seven-year period from June 2, 1933, to May, 1940 are pertinent here. This appears from the facts, indicated by the record, that the defendant has been Trustee of the Missouri Pacific Railroad Company only since June 22, 1933 (R. 4), and that plaintiff left the service of the defendant in May 1940 (R. 2, 22). It also appears that plaintiff commenced work for the Missouri Pacific Railroad Company

[6] These rules have been published by the Commission in booklet form, and given wide publicity. One booklet, entitled "Laws, Rules and Instructions for Inspecting and Testing of Steam Locomotives and Tenders and their Appurtenances," publishes the rules regarding the boiler, these rules bearing numbers between 1 and 100. The same booklet also publishes the rules regarding the other parts of the locomotive, etc., numbered 101 up to 200. A second booklet, entitled "Laws, Rules, and Instructions for Inspection and Testing of Locomotives other than Steam," contains rules in the 200 and 300 series. These booklets have been republished from time to time by the Commission to include changes and amendments.

July 4, 1908, and was employed principally as a fireman on passenger locomotives operated on that part of the Missouri Pacific which extends from Joplin, Mo., to Kansas City, Mo. (R. 2, 22). Apparently it is not disputed that both plaintiff and defendant were engaged in interstate commerce in the operation of interstate trains.

Three of the Commission's rules, referred to in the opinion below (R. 26, 27, 28), appear to be directly involved in the case at bar, namely, Rules 101, 116 (a) and (g), and 120. These rules, which are still in effect and which were in force throughout the period involved in the case at bar, and which apply alike to passenger and freight steam locomotives, read as follows:

> Rule 101. The railroad company will be held responsible for the general design, construction, and maintenance of locomotives and tenders under its control.
>
> Rule 116. (a) *Cabs.*—Cabs shall be securely attached or braced and maintained in a safe and suitable condition for service. Cab windows shall be so located and maintained that the enginemen may have a clear view of track and signals from their usual and proper positions in the cab.
>
> (g) *Unnecessary openings in cab.*—Unnecessary or excessive openings in locomotive cabs around reverse levers, grate-shaker levers, pipes, rods, running boards, doors, windows, between cab and boiler, around wind sheets, or at any other place in cab or deck where rain, snow, or wind

may enter shall not exist on any locomotive used during the period from November 1, to April 1 within the territory specified in paragraph (d) [including Missouri].

120. *Sanders.*—Locomotives shall be equipped with proper sanding apparatus, which shall be maintained in safe and suitable condition for service, and tested before each trip. Sand pipes must be securely fastened in line with the rails.[7]

Rules 101 and 120 were first adopted by the above-mentioned order of October 11, 1915, and have since remained in force without change. Rule 116 was first adopted on the same date and then contained three paragraphs, designated (a), quoted above, and (b) and (c). The latter two rules, quoted in the margin,[8] do not appear to be directly pertinent here. As explained more fully hereinafter, Rule 116 (g) became effective

[7] That sanders are an important if not an essential part of locomotives is indicated by this rule requiring all steam locomotives to be equipped with proper sanding apparatus and also by the fact that the Commission's rules governing other than steam locomotives likewise require these safety devices. Rule 235 of the latter rules (49 C. F. R., 91.235) provides: "Each locomotive unit shall be equipped with proper sanding apparatus, which shall be tested before each trip. Sand pipes shall be securely fastened and arranged to deliver the sand on the rails in front of the wheel contact."

[8] "(b) Road locomotives used in regions where snowstorms are generally encountered shall be provided with what is known as a 'clear vision' window, which is a window hinged at the top and placed in the glass in each front-cab door or window. These windows shall be not less than 5 inches high.

November 1, 1928. It has since remained in force without change.

In addition to the above-mentioned rules, attention is called also, to the following rules (which rules have been in effect since prior to 1933):

(102). The mechanical officer in charge, at each point where repairs are made, will be held responsible for the inspection and repair of all parts of locomotives and tenders under his jurisdiction. He must know that inspections are made as required and that the defects are properly repaired before the locomotive is returned to service.

(103). The term "inspector" as used in these rules and instructions means, unless otherwise specified, the railroad company's inspector.

(104). Each locomotive and tender shall be inspected after each trip, or day's work, and the defects found reported on an approved form to the proper representative of the company. This form shall show the name of the railroad, the initials and number of the locomotive, the place, date, and time of the inspection, the defects found, and the signature of the employee making the inspection. The report shall be ap-

located as nearly as possible in line of the enginemen's vision, and so constructed that they may be easily opened or closed."

"(c) Steam pipes shall not be fastened to the cab. On new construction or when renewals are made of iron or steel pipe subject to boiler pressure in cabs, it shall be what is commercially known as double strength pipe, with extra heavy valves and fittings."

proved by the foreman, with proper written explanation made thereon for defects reported which were not repaired before the locomotive is returned to service. The report shall then be filed in the office of the railroad company at the place where the inspection is made.

In connection with Rules 101 to 104 attention is invited to the report entitled *Inspection of Locomotive Boilers*, 73 I. C. C. 761 (1922) which indicates the extent to which the Commission through its inspectors has been able to inspect locomotives. At that time the Act authorized the appointment of only fifty inspectors. The amendatory Act of June 7, 1924, authorized fifteen additional inspectors.

3. Alleged violations of Boiler Inspection Act and rules thereunder in case at bar

Petitioner, in his fourth amended petition for damages (R. 1–4), after quoting section 2 of the Boiler Inspection Act, alleged (R. 3–4), that his "said injuries and conditions were directly caused by the defendant's violation of said Boiler Inspection Act because said locomotives, which defendant used, were in improper condition and unsafe to operate in the service, and when their conditions constituted an unnecessary peril to plaintiff's life and limb in that when—

1. Said dust and sand would and did enter into and permeate the cabs and decks

of said locomotives in quantities that were harmful to the plaintiff to breathe, inhale and absorb.

2. The sanders and sanding devices of said locomotives would loose and let out sand and so that harmful quantities of sand would and did come from the same when set in operation and when (a) the partitions or humps in the sand traps were out of adjustment, or were worn, (b) the sand domes or sand containers or sand boxes were loose at the boiler connections, (c) the sand pipes break [sic] or were broken off or were loose or were perforated, (d) the valves or traps holding said sand were not in proper mechanical condition and were not properly adjusted.

3. The decks and connections on such locomotives would and did permit said dusts and sand to enter into said cabs of said locomotives in quantities harmful to plaintiff when (a) the connections between the boiler and the deck were old, worn, or loose, (b) the grate-staff riggings were without covers, or (c) when such covers thereon were warped, or bent, or did not fit, (d) the floor boards were worn, or loose, or contained open spaces.

4. The defendant failed to maintain said locomotives, cabs, decks, and the places where plaintiff was required to work in safe condition.

As this court knows judicially,[2] the sanding apparatus of a locomotive consists of devices which enable the engineer to apply sand to the rails under the driving wheels of the locomotive, as needed, in order to increase the adhesion, and prevent the driving wheels from slipping. The apparatus consists of various parts, including primarily a receptacle to carry the sand. This receptacle, called a sand box or dome, is a water-tight compartment, with a capacity, depending upon the size and type of the locomotive, of from approximately one to two barrels of sand. It is usually placed on the top of the locomotive near the front end, between the smoke stack and the steam dome.

The sand runs by gravity through short nipples on either side of the sand dome to the sand traps. These traps are usually called "sanders." Small air pipes or tubes lead from the sand traps to the control valve in the cab of the locomotive. This valve in turn is connected by a pipe to the compressed air tanks on the locomotive. When the engineer opens the valve a certain quantity of compressed air is forced to the sand traps, which blows the sand from the bottom of the trap and over the hump therein and down through the "sand pipes" to a point immediately in front of

[2] The evidence introduced at the trial is not included in the transcript of the record before this Court. Some of the evidence is stated in the opinion of the court below (see R. 22-24) but there is no description of the locomotive parts mentioned therein.

the driving wheels. The sand traps are equipped with "humps" to prevent the sand from running continuously down the sand pipes by gravity. Depending upon its type, a locomotive may be equipped with two or three pairs of sand traps and pipes, one pair fastened in front of the first set of driving wheels, another pair immediately to the rear of the last set of driving wheels (for use in backing the locomotive), and, possibly, another pair immediately in front of a third set of driving wheels, if the locomotive has three or more pairs of driving wheels.

Attention is called in this connection to the opinions in *Anderson* v. *B. & O. R. Co.* (2 C. C. A.), 89 F. 2d 629 (1937) and 96 F. 2d 796 (1938), which give a clear description of a typical locomotive sanding apparatus. That case is analogous to the present case to the extent that it was one under the Federal Employers' Liability Act and relied upon a violation of section 2 of the Boiler Inspection Act and the Commission's Rule 120 relating to sanders. The action was brought by plaintiff's decedent who met his death while employed by the defendant as a fireman on a pusher engine coupled to the rear of an interstate freight train. In its first opinion the court said that the correctness of the ruling of the District Court in directing a verdict for defendant was the sole matter presented by the appeal and that it raised two ques-

tions: "(1) Whether there was any evidence of a violation of the Boiler Inspection Act and Rule 120 promulgated thereunder, and (2) whether, if there was, the jury could be permitted to find that such violation was the proximate cause of the fireman's death." In discussing the first question the court described the sanding apparatus on the engine, as follows; p. 630:

> The pusher engine was equipped with a sanding apparatus, consisting of two sand-boxes above the boiler, from each of which two pipes of an inch and a half diameter led down, one either side of the engine, to a point two inches above the rail and two inches in front of the forward drive wheel of each set of drivers. Before the trip started the apparatus was tested and found to be working satisfactorily. After having proceeded about thirteen miles to Stanley, a grade was reached on which it was necessary to use the sanders. Here it was found that the apparatus failed to deliver sand to the rails and that the drivers began to slip and spin until finally the train was stalled. There was evidence from which the jury might reasonably infer that before the train had come to a complete stop Anderson got off the engine on the left side and walked forward to the sand pipes for the purpose of tapping them with a pick to get the sand to flow; and that while stooping over to look at one of the pipes he got in the way of an engine of the Erie Railroad coming from the opposite direction

> around a curve on the adjacent track. He was struck by the pilot beam and instantly killed. After the train had stalled, Cobb, the engineer, tapped a little wet sand from the ends of each of the pipes on each side of the engine, and thereafter the sanders functioned properly to the end of Cobb's run.

The defendant contended that, since the evidence showed without contradiction that the sanders worked both before and after the accident, their temporary failure could not have been due to any mechanical or functional defect but resulted from the clogging of the sand at the end of the pipes because of weather conditions. Overruling this contention and holding on the issue of violation of the Boiler Inspection Act and Rule 120 that there was evidence enough to go to the jury, the court said, p. 630:

> It was a rainy day in July, but the rain was not of unusual or extraordinary severity. When the rails are wet is the precise time when the sanders are needed, and the plaintiff argues persuasively that an apparatus which will become clogged so that it cannot function during an ordinary summer rain does not comply with the rule requiring a "proper sanding apparatus, which shall be maintained in safe and suitable condition for service." The engineer testified that the sand is blown by air from the box through the pipes; that the flow of air is controlled by the operation of valves

> in the engine cab; and that the valves were wide open from the time the train left Stanley until it stalled. We think that the failure of the apparatus to function when operated in a proper manner and under normal working conditions makes a prima facie case of insufficiency either in the air pressure or in mechanical construction. The doctrine of res ipsa loquitur has frequently been applied to prove, in the absence of explanation, a violation of provisions of the Safety Appliance Acts (45 U. S. C. A., section 1 et seq.) * * * but a sanding apparatus which will not sand on a wet day in summer, when the valves are open and the sandboxes filled, is no better than none at all. No evidence was presented by the defendant that clogging of the pipes is unavoidable in wet weather, even though the apparatus be in perfect order.

In its opinion on the second appeal in that case (96 F. (2d) 796) the court described the sanding apparatus in greater detail, as follows, p. 797–8:

> The pusher engine upon which Anderson was employed as fireman was a Mallet compound engine equipped with Leach sanders. Above the boiler are two watertight sandboxes, each holding 30 to 50 gallons of dry sand. Joined to each box are two "traps," each trap serving a pipe on one side of the engine to discharge sand to the rail just in front of a set of drivers. The "trap" is divided into two compartments by a bridge.

The sand flows by gravity into one compartment and is supposed to rest there until agitated by the injection of compressed air through a nozzle in the side of that compartment, the air being controlled by the engineer through a valve in the cab of the engine. When the valve is opened some sand is blown over the bridge into the other compartment, with which the discharge pipe is connected, and slides down to the rail. There is some uncertainty in the testimony whether the sand falls wholly by gravity or whether the compressed air sets up some downward pressure in the discharge pipe. We think the jury might find that there is some slight downward pressure; several witnesses said that if there was too much air pressure the sand would be blown off the rails. The discharge pipe has an inside diameter of one and a quarter inches, and a large washer was mounted on the outside about two inches from the bottom to serve as a shoulder to prevent water running to the open end of the pipe in rainy weather. There was testimony that conditions of moisture may cause wet sand to clog the end of the pipe, in which case all that is needed is to tap it out with a hammer. There was also testimony that the sanders may fail because the nozzle in the trap becomes clogged; in that event no sand is blown over the bridge and it is necessary to open the trap and clear the nozzle with a wire.

> Cobb, the engineer, testified that he tested the sanders at D. C. Tower before the train started and found them working properly; that he used them to start the train and not at all thereafter until he reached the grade at Stanley, thirty minutes later. When he opened the valves at Stanley, although the gauge showed sufficient air pressure, it at once became apparent from the spinning of the drivers that the sanders were not functioning properly, and about a mile beyond the train stalled.

The only rule of the Commission which seems directly relevant to plaintiff's allegations (specification No. 2, R. 3) regarding the sanding apparatus of defendant's locomotives on which plaintiff worked as fireman during the 7-year period in question is Rule 120, *supra*, which requires that locomotives shall be equipped with "proper" sanding apparatus, that this apparatus shall be maintained "in safe and suitable condition for service," and shall be tested before each trip; further, that the sand pipes must be securely fastened in line with the rails.

It appears that plaintiff does not rely upon the failure of the sanding devices to operate in the performance of their mechanical function to deliver sand to the rails whenever, in the judgment of the engineer, sand is needed, but rather, that because parts of the devices were loose or broken or perforated, an unnecessary or excessive amount of sand was released.

The "grate-staff riggings" referred to in paragraph numbered 3 of the plaintiff's petition, quoted above, we think refers to the grate-shaking rig, which is an apparatus attached to the movable grate bars of shaking or rocking grates, by which they are moved back and forth, with a rocking motion, to disturb the fire over the whole area of the grate, to effect proper combustion. The grate-shaking rig is operated by means of a suitable lever placed in the cab. The lever is ordinarily detachable, and, usually, a locomotive is provided with a cover, which may be box-like in shape, or a piece of flat metal, which may be used to close, as near as may be, the necessary openings in the cab floor for the grate-shaker bars.[10]

The only rule of the Commission which seems directly relevant to plaintiff's specification No. 3 (R. 3–4) relating to the condition of the locomotive cabs, is Rule 116, *supra,* and particularly paragraph (g), which prohibits *unnecessary* or

[10] *Encyclopedia Americana*, Vol. 17, pp. 541–544, contains a descriptive list of the principal parts of a modern locomotive, including, on p. 543, sand box, sand pipe, grates and grate-shaking rigs. The *Locomotive Cyclopedia, 1947* (compiled and edited for the Association of American Railroads and published by Simmons-Boardman Publishing Corp., 30 Church Street, New York 7, N. Y.) contains a "Dictionary of Locomotive Terms," pp. 11–96, and descriptive articles and data in regard generally to boilers, including grate shakers and rigging, section 5, pp. 432–438; cabs, cab fittings, and boiler mountings, section 6, including cab arrangements, pp. 450–462; cab curtains, pp. 464–465, and sand boxes and samlers, i. e., sand traps, pp. 496–505.

excessive openings in locomotive cabs during the five colder months of the year within the northern territory specified in Rule 116 (d), which includes roughly all that part of the United States north of the southern boundary of Missouri. The rule itself indicates that rain, snow, or wind may enter at various places in the locomotive cab or the deck (floor) thereof, including openings around reverse levers, grate-shaker levers, pipes, rods, running boards, doors, windows, between cab and boiler, and around the wind sheets.

4. Reports of Commission in proceedings under the Boiler Inspection Act

Shortly after the decision of this Court in *Napier* v. *A. C. L. R. Co.*, 272 U. S. 605, November, 1926, the complaint in *Wisconsin R. R. Comm.* v. *A. & R. R. R. Co.* was filed, and on May 7, 1928, the Commission rendered its report, 142 I. C. C. 199. It found that the safety of employees and travelers upon railroads required (1) that in certain specified northern territories steam locomotives and tenders have suitable cab curtains; (2) that unnecessary or excessive openings about locomotive cabs be closed during the winter months; (3) that oil-burning locomotives do not take air into the firebox from the interior of the cab; and (4) that steam locomotives used in road service have a suitable storm window attached to side cab windows.

In its report there the Commission explained, p. 202, that "Various parts and appurtenances which must be operated or observed by the engineer or fireman, or both, are located within the cab. In some cases these parts extend beyond the cab, while in others they are connected by pipes, rods, or levers which extend beyond the cab, and in such cases an opening in the cab is necessary." On this subject the Commission further said (p. 203), "If openings exist in cab around pipes or levers, between cab and boiler, or around windows or doors, the wind, rain, and snow may enter the cab regardless of curtain equipment. The space within the cab is limited and it may be said with substantial correctness that the engineer and fireman are exposed to whatever wind, rain, and snow enters the cab." The Commission further said, p. 203: "When locomotives are moving at a high rate of speed, wind, rain, and snow will enter the cab through the smallest opening, and under certain conditions it is practically impossible to so fit the parts of the cab or to arrange the curtains so as to exclude all of the wind, rain, and snow."

After setting out the above facts and others, the report proceeded to consider the question whether profection of the enginemen against inclement weather required cab curtains, and in that connection said, p. 203:

It is so obvious that enginemen cannot as safely and properly perform their duties when cold or wet as when dry and warm that comment upon this proposition seems unnecessary.

On page 204 the Commission said:

The cabs of locomotives are usually constructed of metal. Numerous openings are necessary therein. It is usually necessary that enginemen open the windows in order to observe signals and perform other duties.

Later in the report the Commission discussed the matter of unnecessary openings in the cab and in this connection said, p. 209:

It is evident that in many instances the openings in the cab are much larger than necessary and that in many cases the remaining space could be entirely and substantially closed by the use of a suitable material or device. In other cases openings are permitted to remain although not used. Unnecessary or excessive openings are often permitted around reverse lever, grate-shaker levers, and between cab and boiler. Often cab windows and doors are not properly fitted and unnecessary or excessive openings are thus created. The importance of closing these unnecessary or excessive openings is illustrated by testimony to the effect that snow will sift into the cab through any opening that will permit wind to enter, and around cab doors and windows

which are closely fitted." Much of the snow entering the cab is changed into vapor which settles upon the enginemen causing them to become wet. This vapor also settles upon the cab windows causing them to become frosted, which interferes with the vision of the enginemen.

It is clear from the record that unnecessary openings permit wind, rain, and snow to enter the cab. The engineer and fireman cannot escape the effects thereof. There is no disagreement as to the necessity of closing such openings and they should be kept closed during the winter months.

In considering the necessity for storm windows, the Commission said, p. 210:

To properly observe signals and perform their duties it is necessary that the engineer keep the side cab window open during much of the time regardless of inclement weather. The same is true with respect to the fireman except to a lesser degree. In order to protect the engineer and fireman from the wind, rain, and snow when the locomotive is running at a high rate of speed and the side cab windows open many of the carriers have attached

[11] *Locomotive Cyclopedia*, *supra*, defines "cab door" as follows, p. 24:

"The movable partition which closes the opening in the front of a cab leading out to the running board. It is usually hinged to swing outward and has glass in the upper panel. Cab back doors are sometimes used to close the opening between the cab and tender, but generally a curtain is used."

> to the side cab windows or to the sides of the cab a small storm window or wind shield. This storm window, or wind break, as it is sometimes called, is approximately 5 inches wide and 18 inches in height and is hinged at the side and can be folded back against the window when not in use. These windows give much needed protection to enginemen and that they are necessary is not disputed upon the record. They should be installed and maintained on all locomotives used in road service.

With the report in that proceeding the Commission made an order, also dated May 7, 1928, which amended Rule 116, *supra*, by adding thereto paragraphs (d) to (i), inclusive, to become effective November 1, 1928. Paragraph (g) is quoted above. The other paragraphs (49 C. F. R. 91.116 (d), (e), (f), (h), and (i), pp. 1252–4) do not appear directly pertinent here.

The next case in which the Commission dealt with the subject of locomotive appliances was *Public Utilities Commission of Ohio* v. *Pennsylvania R. Co.*, 151 I. C. C. 448 (1929). It there required that steam locomotives, except those using oil fuel, should be equipped with mechanically operated fire doors, so constructed and maintained that they may be operated by pressure of the foot on a pedal, or other suitable appliance, located on the floor of the cab or tender at a suitable distance from the fire door, so that they may

be conveniently operated by the person firing the locomotive. After discussing the evidence on the question whether mechanically operated fire doors lessened materially the physical exertion required of firemen, the Commission reached the conclusion that they do and that they tend to prevent excessive fatigue. In considering the question before it the Commission drew an analogy from the intent of Congress in enacting the Hours of Service Act, p. 453:

> Congress has in the interest of safety placed certain limitations on the periods during which enginemen, among others, shall be required or permitted to continue on duty. The intent of Congress in enacting the hours-of-service act was to promote the safety of travelers and employees by limiting the hours of labor of those in control of dangerous agencies lest by excessive periods of duty they become fatigued, indifferent, or inefficient, and cause accidents leading to injuries and destruction of life. *United States* v. *Chicago, M. & P. S. Ry. Co.*, 197 Fed. 624; *United States* v. *Kansas City Southern Ry. Co.*, 202 Fed. 828; *United States* v. *Yazoo & M. V. R. Co.*, 203 Fed. 159; *United States* v. *Atlantic Coast Line R. Co.*, 211 Fed. 897; *United States* v. *Missouri K. & T. Ry. Co.*, 208 Fed. 957; *San Pedro, L. A. & S. L. R. Co.* v. *United States*, 213 Fed. 326; *United States* v. *Pennsylvania R. Co.*, 239 Fed. 576.

Thereupon the Commission made this finding, p. 453:

> It is generally recognized that locomotive firemen, especially on hand-fired locomotives, undergo greater physical exertion than practically any other class of employees engaged by the railroads. To lessen the physical exertion required of these men in the ordinary performance of their duties will promote safety, their health, and their comfort. Compare *Napier* v. *Atlantic Coast Line, supra.*

The ultimate conclusion of the Commission was expressed on page 467 as follows, speaking of mechanically operated doors:

> Their application and maintenance is necessary on all steam locomotives, not burning oil as fuel, in order that they may be used with safety and without unnecessary peril to life and limb and we so find.

In *Johnston* v. *Atlantic Coast Line R. Co.*, 190 I. C. C. 351 (1933), the Commission found that the safety of employees and travelers on railroads required that certain steam locomotives should be equipped with a suitable type of power-operated reverse gear. Its order amending its rule (No. 157) so as to give effect to its findings, was attacked in court proceedings and was set aside by this court in *United States* v. *B. & O. R. Co.*, 293 U. S. 454 because not supported by essential findings.

The opinion of this court in that case considered three principal questions. First, whether the Commission has authority to forbid the use of a locomotive equipped with a manually operated reverse gear. Second, whether the Commission has any authority to make changes in the existing rules concerning reverse gears. Third, whether the Commission's findings were adequate. The court ruled in the affirmative upon the first two questions and in the negative upon the third.

In regard to the first question the court used the following significant language, pp. 458–59:

> The Commission clearly has authority, in an appropriate proceeding, to forbid the use of a locomotive equipped with a manually operated reverse gear if, by reason thereof, the engine is rendered unsafe or subjects employees of the railroad or others to "unnecessary peril to life or limb." The substitution of power operated reverse gear for manually operated reverse gear, might conceivably be found necessary to promote safety, even if it did so only indirectly by preventing the impairment of the health of engineers through excessive exertion or fatigue. To require the installation of power operated reverse gear is, in its nature, within the scope of the authority delegated to the Commission. For "the power delegated to the Commission by the Boiler Inspection Act as amended is a general one. It extends to the design, the construction, and the material of every

part of the locomotive and tender and of all appurtenances." *Napier* v. *Atlantic Coast Line*, 272 U. S. 605, 611.

Regarding the second question, the court said *inter alia*; pp. 461–2:

> But the responsibility for rules adequate *to ensure safety* was imposed by Congress upon the Commission; and to discharge that duty, it was essential that the Commission, also, should possess the initiative in rule making. To this end, it was granted the power, not only of disapproving proposed rules, but also of requiring modifications of those in force. The power so conferred may obviously be exercised, as was done here, on complaint of the Brotherhood representing employees directly affected.
>
> In the *Napier* case, * * * we said: "The duty of the Commission is not merely to inspect. It is, also, to prescribe the rules and regulations by which the fitness for service shall be determined. Unless these rules and regulations are complied with, the engine is not 'in proper condition' for operation. Thus the Commission sets the standard. By setting the standard it imposes requirements. * * *." [Italics supplied.]

In considering the third point the court made it clear that the Commission does not possess the broad legislative power to require the adoption on locomotives of such devices as, in its discretion, it may from time to time deem desirable, and that

its authority extends only to devices required to remove *unnecessary peril to life or limb*. In so holding the court said, pp. 462–4:

> The operation of an engine, however equipped, involves some "danger to life or limb." At common law the carriers were "free to determine how their boilers should be kept in proper condition for use without unnecessary danger." *Baltimore & Ohio R. Co.* v. *Groeger*, 266 U. S. 521, 529. And the Act conferred authority to prescribe by rule specific devices, or changes in the equipment, only where these are required to remove "unnecessary peril to life or limb." The power to make the determination whether the proposed device or change is so required, vests in the Commission. But its finding to that effect is essential to the existence of authority to promulgate the rule; and as Congress has made affirmative orders of the Commission subject to judicial review, *The Chicago Junction Case*, 264 U. S. 258, 263–265, the order may be set aside unless it appears that the basic finding was made. *Florida* v. *United States*, 282 U. S. 194.
>
> The primary question of fact presented for determination was, as the report of the Commission states, "whether the use of locomotives equipped with hand reverse gear, as compared with power reverse gear, causes unnecessary peril to life or limb." The report discusses, at some length, the alleged advantages and disadvantages of the

> two classes of reverse gear and the expense which the proposed change would entail; and concludes with "findings" that, to a certain extent, the change should be made. But whether the use of any or all types of steam locomotives "equipped with hand reverse gear as compared with power reverse gear causes unnecessary peril to life or limb," is left entirely to inference. This complete absence of "the basic or essential findings required to support the Commission's order" renders it void. * * *

Thereafter the proceeding before the Commission was reopened and further evidence was submitted. On June 8, 1937, the Commission rendered a further report, *Johnston* v. *Atlantic Coast Line R. Co.*, 222 I. C. C. 542. The issue for determination upon the enlarged record, the Commission said, p. 544, "is whether defendants, in using or permitting to be used in interstate commerce steam locomotives equipped with manual reverse gear instead of power reverse gear cause unnecessary peril to life or limb, in violation of the Boiler Inspection Act * * *." Finding that it has authority to initiate rules *adequate to ensure safety to employees and travelers on railroads* and that its authority extends to the establishment of a rule requiring the removal of appliances which it finds cause *unnecessary peril to life or limb* and the substitution therefor of appliances which it finds will promote the *safety* of employees

and travelers by rail, the Commission, p. 565, said:

> * * * The responsibility for rules adequate to insure safety to employees and travelers on railroads, with respect to operation of locomotives, is delegated by Congress to the Commission by the Locomotive Inspection Act, and to discharge that duty it is essential that the Commission possess the initiative in rule making. The Commission's quasi-legislative power under that act is exercised in the making of rules. *United States* v. *Baltimore & O. R. Co.*, *supra*. The Commission performs its functions in the interest of the general public rather than in the interest of particular litigants and it is our duty, under the Locomotive Inspection Act, not merely to inspect locomotives but also to prescribe the rules and regulations by which fitness of locomotives for service shall be determined. Thus the standard is set, and requirements imposed under that act. The power to require specific devices on locomotives has been extensively exercised. *Napier* v. *Atlantic Coast Line R. Co.*, 272 U. S. 605, 612. Our failure to establish a rule to provide for the removal of appliances which we find cause unnecessary peril to life or limb, and to substitute therefor appliances which we find promote the safety of employees and travelers by rail, would be an evasion of one of the important duties placed by statute upon us.

The Commission's ultimate finding and conclusion, expressed on p. 568, was that "the use on steam locomotives of manually-operated reverse gear as compared with power reverse gear causes unnecessary peril to life and limb and that the safety of employees and travelers on railroads requires that suitable power-operated reverse gear shall be substituted for manually-operated reverse gear." (The new order contemporaneously entered was not contested in court proceedings.)

Eleven years ago the Commission rendered its report in the last proceeding before it regarding locomotive appliances, *Johnston* v. *Atchison, T. & S. F. Ry. Co.*, 225 I. C. C. 519, decided December 7, 1937. In that report the Commission found that the use of coal-burning steam locomotives of certain classes in fast or heavy service (as defined in the report), when hand fired, causes unnecessary peril to life or limb of employees and travelers upon railroads, and that the safety of such employees and travelers requires that said locomotives shall not be used in such service unless equipped with automatic stokers or other mechanical means of supplying fuel to the fire. Near the end of this 33-page report is a summary of the conclusions reached by the Commission, pp. 549–51, which reads:

> 1. That under modern traffic and transportation conditions the safety of employees and travelers requires that a constant

lookout be maintained of the track and signals ahead of all railroad trains.

2. That construction of modern large and heavy hand-fired coal-burning locomotives is such that necessary lookout cannot be maintained at all times by the locomotive engineer, and that the time required to supply the fire with fuel and to perform other necessary duties makes it impossible for the fireman to maintain such lookout, often at critical periods when because of curvature of track, drifting smoke, passing of other trains, or other obstructions the engineer's view of signals, approaching vehicles at highway crossings, crossing watchmen, flagmen, landslides, rocks, or other inert objects on the track is obscured, resulting in unnecessary peril to life or limb of railroad employees and the traveling public.

3. That the intense glare from the open firebox door of heavy hand-fired coal-burning locomotives, into which the fireman must shovel from 2,500 to more than 8,000 pounds of coal per hour, often causes temporary fire blindness which prevents firemen from promptly distinguishing wayside signals such as block, train-order, interlocking-plant, or other fixed signals, classification lights on other trains, or various other signal lights which the safety of operation requires to be seen and correctly read.

4. That firebox explosions or backfires occasionally occur, and that men in the loco-

motive cab are burned or otherwise injured thereby.

5. That firemen on many hand-fired coal-burning locomotives operating to capacity perform much of their work within 3 feet or less of an open firebox within which the temperature ranges from 1,800° to 2,500°. That emergency conditions and their regular duties often require them to suddenly leave the cab and expose themselves to outside winter temperatures, occasionally for considerable periods, and that such exposures injure the health of firemen, particularly those of middle age or over who have been hand-firing for many years.

6. That no class of railroad operating employees perform labor that is comparable with the heavy labor performed by locomotive firemen, and this labor is substantially greater on the large coal-burning locomotives used in fast and heavy service. The act of firing a locomotive requires the transfer, by means of a scoop shovel, of quantities of coal, ranging on many runs from 10 to 25 or more tons, from the tender of the locomotive to the firebox, a maximum distance of more than 20 feet, and an average distance of from 12 to 15 feet. The coal must be evenly and skillfully distributed over grate areas ranging from 80 to 100 square feet at the time when the most efficient combustion will result. This and the many other duties necessarily performed in firing a locomotive, requires the expenditure of tremendous energy on the

part of the fireman, which results in excessive fatigue and often in permanent impairment of health which renders many men of middle age physically unable to continue hand-firing heavy locomotives."

This is followed by ultimate findings, as follows, p. 551:

> For the reasons above summarized, and others which are set forth in detail in this report, we find:
>
> That the use in fast or heavy passenger service, as defined herein, of hand-fired coal-burning locomotives which weigh on driving wheels 160,000 pounds or more, and the use in fast or heavy freight service, as defined herein, of hand-fired coal-burning locomotives which weigh on driving wheels 175,000 pounds or more, causes unnecessary peril to life or limb, and that the safety of employees and travelers on railroads requires that all such locomotives be equipped with a suitable type of mechanical stoker.
>
> We further find that, to prevent unnecessary peril to life or limb and to promote the safety of employees and travelers on railroads, all coal-burning locomotives of the above weights built on or after July 1, 1938, shall be equipped with a suitable type of mechanical stoker, and such stokers shall be properly maintained.
>
> We further find that, to prevent unnecessary peril to life or limb and to promote the safety of employees and travelers on railroads, all hand-fired coal-burning locomo-

tives of the above weights used in fast or heavy service, built prior to July 1, 1938, shall have a suitable type of mechanical stoker applied as provided herein.

* * * * *

An appropriate order amending our rules for the inspection and testing of steam locomotives and tenders and their appurtenances to give effect to these findings will be entered.

5. Reasons for rules 116 and 120

The Commission's Rule 120, regarding sanders, was adopted, as we have seen, by an order entered over 33 years ago, that is, on October 11, 1915, pursuant to the enlargement made by the Act of March 4, 1915, to cover the entire locomotive. The order was entered after a hearing but no report was issued with it, hence it cannot be said whether the Commission, in adopting Rule 120, considered the possibility of the enginemen contracting silicosis as a result of the construction or arrangement of the sanding apparatus. Indeed, there is nothing in any report of the Commission regarding the rules, instructions, or regulations for the testing of or for appliances upon locomotives (within our knowledge) which deals with the subject. Having been adopted pursuant to an act to promote the safety of employees and travelers upon railroads, it seems a reasonable inference that the rule, requiring all locomotives to be equipped "with proper sanding apparatus,"

to be maintained "in safe and suitable condition for service," and tested before each trip, was intended as a safety measure, designed to contribute toward achieving the purpose of the statute to promote the safety of employees and travelers by compelling interstate railroads to maintain their locomotives "in proper condition and safe to operate" in the service to which they are put "without unnecessary peril to life or limb."

The reasons for the additions to Rule 116, regarding cab curtains and the closing of unnecessary openings in the cab, were given in the Commission's report in *Wisconsin R. R. Com.* v. *A. & R. R. R. Co.*, 142 I. C. C. 199, *supra*. The above excerpts from that report show that the purpose of the new regulations there adopted was to promote the safety of employees and travelers by protecting the enginemen from inclement weather to enable them better to safely and properly perform their duties. The report does not indicate that the additional rules were intended to aid in guarding the engineer or the fireman from the harmful effects of inhaling sand or dust emitted from the sanding devices.

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